days of age. Again, surgeons who have operated upon infants with pyloric stenosis have also suggested that this enormous hypertrophy must begin in prenatal life, because it seemed impossible that such a growth could take place in a few weeks or a few days' time.

This explanation is, of course, hypothetical, but I believe that it has merit.

Chemical Foundation Wins (Propaganda for Reform)—During the late war, our Government seized many German patents on synthetic drugs. Later the Alien Property Custodian, on executive order of President Wilson, sold 4700 German chemical patents to the Chemical Foundation, Inc. This corporation agreed in turn to license any American firm that could present evidence of reliability in chemical manufacture to manufacture under these patents. As a result of this action, physicians may today obtain different brands of arsphenamin instead of one proprietary "salvarsan"—and at competitive prices. The same is true of other useful synthetics. About a year and a half ago, President Harding instructed the Alien Property Custodian to take steps to secure the return of all patents sold to the Chemical Foundation, Inc., on the ground that the price paid was inadequate and the transaction illegal. Suit was instituted by the Government against the Chemical Foundation, Inc., for the recovery of the patents. The suit was won by the Chemical Foundation, Inc. In the decision of the court, it was held that the price was adequate, for the reason that many of the patents were non-workable and that, therefore, because of the financial risk and hazard, the value of the patents "was too slight and problematical to warrant the payment by American citizens of a sum even remotely approximating what they might have been worth to the German owners for their monopolistic purposes." Hence, the bill of complaints filed by the Government was set aside. (Journal A. M. A., January 12, 1924, p. 130.)

A Medical History Society—An organization meeting of medical men and others interested in Medical History was held on Saturday, March 15, at 8 p. m. The meeting was called to order by Doctor Ophuls in the new quarters of the historical section of the Lane Medical Library, on the third floor in the library building.

Emmet Rixford was elected temporary chairman and Henry Mehrtens secretary. Doctor Ophuls outlined the origin of the historical library, calling attention to the latest large addition of books. These were procured by the efforts of Adolph Barkan from Prof. E. Seidel in Meisen, and include 5000 old manuscripts and rare medical books. Continual additions of old and rare medical books are being made to this collection.

It was the opinion of those present that such a society should consist not only of medical men interested in the history of medicine, but that specialists in the allied sciences would also find interest and profit in this collection.

A committee, consisting of Doctors Ophuls (chairman), Evans, P. K. Brown, Hyman and Kerr were appointed to formulate a draft of the organic laws of the society and to get in touch with members of the profession and others who are interested in its ends.

Voltaire's and Frank Crane's Estimate of Physicians Compared—Voltaire once said that "Doctors were men who crammed medicine, about which they knew little, into bodies about which they knew less, to cure diseases about which they knew nothing." Dr. Frank Crane says that regular physicians have done, and are doing more for the human race than all the cults, fads, quacks and pathies put together.—Boston Medical and Surgical Journal, March 6, 1924.

PERFORATIVE APPENDICITIS—APPENDICECTOMY VERSUS DRAINAGE *

By S. M. SPROAT, M. D., Portola, Calif.

In acute perforative appendicitis, with definite abscess formation, there is great temptation to remove the offending member, too often to the detriment of the patient. With a well-walled-off appendiceal abscess, the appendix lying at any portion of its length outside the wall, it is far better surgery to drain the cavity and leave undisturbed the appendix. In the free cases, where nature has made no attempt at limitation of the infection, it is better to remove the offending member, where this can be easily accomplished, but, where protecting walls must be broken down, tissues traumatized with extensive handling, and the infected material disseminated widely, such a procedure is not to the best interests of the patient.

In the cases reported, the following technique was generally employed. The abdomen and anterior rectus sheath was opened over a mid-rectus incision, and the intact muscle freed from its sheath and pulled toward the mid-line. Then, without injury to the muscle, the posterior sheath was opened in the same line as the anterior, and the peritoneum in the same location. When the abdomen is later closed, the intact muscle serves as a support to the abdomen and tends to prevent the herniae, which are so common in these cases. On entering the abdomen, when the omentum was encountered, it was always kept to the left, and the exploration was conducted as low down to the right as possible. Gauze-packs were not employed within the abdomen unless absolutely necessary, but only served to keep the omentum pressed well to the left side of the incision, and thus saved the tissues additional trauma. On encountering an abscess wall, a stitch or two was often placed in the omentum to hold it temporarily to the abdominal wall. The abscess cavity was then entered from its lowest possible point on the right-hand side of the abdomen.

The cavity was carefully explored with the gloved finger and the appendix located from within the abscess cavity itself. Should it lie without the walls in any part, it is in nowise disturbed. The walls of the abscess are also not disturbed in any way. The cavity is thoroughly and carefully explored to determine the presence of any concretion or foreign material that may have been extruded from the appendix. If any such is found, it is removed. There is no irrigation attempted, and it has been my unfailing experience that the more thorough the attempts at cleaning the peritoneum and the more extensive the operative measures in these cases, the poorer the prognosis for the patient.

We all are aware that infection and localized abscess not infrequently follows difficult clean cases that require long and tedious removal of a non-perforative appendix. It is my firm belief that the handling and disturbing of the bowels, omentum, and abdominal contents that is necessary to remove an appendix in abscess cases very often leads to the

* Read before the Twentieth Annual Meeting of the Nevada State Medical Association, Reno, September, 1923.

death of the patient a few days later. In inserting drainage, several points must be noted. First, to drain through a stab wound at the lowest possible point of the cavity. Second, to institute drainage to the portion of the appendix lying within the cavity. The closer to the right the drainage is placed and the freer the initial drainage, the shorter the convalescence.

The disadvantages that are given to this conservative method are, first, that about 20 per cent require secondary operation for the removal of the appendix, as, in this number, further appendiceal trouble is noted after recovery. Second, convalescence is retarded. In regard to the first objection, the removal at an opportune moment may be accomplished at slight surgical risk to the patient, and Murphy has demonstrated that such appendices are usually little more than fibrous cords. Convalescence is usually much more rapid in such cases, if the surgeon is prepared promptly and properly to open up any new abscess cavities, which occasionally develop. The tubes are preferably soft cigarette drains, a large one to the abscess proper and a smaller one contiguous to the appendix, and another through the stab wound to the lowest point of the cavity. Drainage is usually favored by lying on the right side in a semi-Fowler position. It is very important to overcome tissue dehydration by interrupted proctoclysis, hypodermoclysis, and intravenoclysis, and this is forced to tissue saturation during the first forty-eight hours.

Haggard had to reoperate such cases and remove appendix at a later date in about 20 per cent, and this percentage has almost coincided with mine. In other words, such an appendix, when properly treated and drained, will give no further trouble in 80 per cent of the cases. The fact that so many of these cases so treated recover after stormy convalescence convinces one that even a small amount of added operative trauma would have caused death. This added trauma is given when the appendix is removed. Better a safe secondary operation in 20 per cent than a dead patient. The method of Petit, in allowing the right lateral abdominal wall to form one side if possible, has been followed. The risk of post-operative hernia, which runs from 12 per cent to 15 per cent in these cases, is minimized as follows: There is no drainage made through the operative wound that is not carried through the split fibres of the rectus muscle. This, I believe, is the great advantage of this incision over the outer rectus incision, and it has been described by Eliot, Ellsworth, and Pickhardt.

I recently operated upon under this method, by local anaesthesia, a man 72 years of age, with a systolic blood pressure of 180 and glycosuria, with recovery. I am convinced that, had adhesions which were present been torn or seriously disturbed, death would have resulted instead of recovery within four weeks. To have removed the appendix, it would have been necessary to seriously disturb these adhesions.

The following is a list of cases operated in the past four years by this method, with time of hospitalization. In these cases, the appendix was allowed to remain and drainage only was instituted.

Mrs. S. B., 18 days; V. K., 17 days; J. L., 25 days; Mrs. W. L., 46 days; C. A., 19 days; F. F., 46 days; W. S., 21 days; M. F., still in hospital; G. T., 27 days; J. H., 47 days; T. A., still in hospital; C. J., 36 days; H. R., 33 days; L. A., 48 days.

Upon three of the above, the appendix was later removed. In one, there was a post-operative hernia, which was repaired. One, after being passed for life insurance, was later operated upon in another hospital for secondary abscess, and the appendix was removed, with death. Average length of hospitalization, 31 days; mortality, none died; 12 operated upon under ether anaesthesia and two under local; one had a fecal fistula, which closed spontaneously.

CONCLUSION

In definite well-walled-off abscess cases of perforative appendicitis, with the appendix lying outside of the abscess walls, the mortality will be lower and it is safer not to remove the appendix.

DISCUSSION

Horace J. Brown (Thoma-Bigelow Building, Reno, Nev.)—Whether to remove the appendix in these cases, or not, seems to be a question open to much discussion. In my own experience, it has been a puzzle whether to leave the appendix and drain, or remove the appendix and drain, with drainage being the only part of the procedure that I feel sure of. I have broken up adhesions in order to remove necrotic appendices, put in generous drains, and had so many good results that I felt confident that that was the method of choice until disaster overtook me and two or three such patients were lost in succession; then I would change to drainage only and feel very secure as long as all got well, but when disaster again overtook me I would change back again. Just at present I am on the "removal" side of the fence, but cannot say that I feel real secure there. Seriously, I believe that the whole problem depends upon the nature and severity of the infection. If we have an abscess, perforated or necrotic appendix that is caused by staphylococci, or colon bacilli as the predominating organism, then I think we can either remove the appendix, breaking up many adhesions in order to do so, or we can simply drain, with the accent on the "drain," and our patients will have a good chance of recovery; but if we have a streptococcic infection to deal with, and it is of the virulent type, I believe that a large percentage of such cases will die, regardless of the treatment used. I have become thoroughly convinced of the value of adequate drainage and believe that too many of us are prone to use drains that are more ornamental than useful. I believe that our patients will fare better if we use large, loosely packed, cigarette drains, and plenty of them, in all pus cases, and I know that I can sleep better when I know that I have an ample drain in any doubtful case.

R. A. Bowdle, M. D. (East Ely, Nev.)—So far as I can recall I have never operated for acute appendicitis without removing the appendix. I see a great many ruptured appendices. It seems to me that, with careful attention to the operative technique, you can remove the appendix with no greater trouble than that incurred in thoroughly exploring the abscess cavity with the glove-finger. I believe that every appendicular abscess should be walled off from the general peritoneal cavity by means of gauze strips. For this purpose I use a gauze packing about one inch wide and twelve inches long; these are moistened, and can be so arranged that, with a minimum of trauma, they will protect the remainder of the abdominal cavity. I think that the rough handling of tissues and the lack of knowledge in knowing

how to reach the caecum is responsible for many deaths that could otherwise be avoided. In the matter of drainage I firmly believe that it is better to drain a case that is questionable than to close one up that subsequently develops an abscess. In addition to the sites of drainage which Sproat uses, I invariably place a cigarette drain down into the right pelvis; this is particularly necessary where you are using the Fowler position following operation. Another very important point in the handling of these cases is the saturation of the patient's system with fluid. As has been so well shown by Crile, this can best be accomplished through hypodermoclysis. My routine is to give the patient at least 3000 cc. during the first twenty-four hours—he is kept well morphinized and in a Fowler position. I use practically the same incision which Sproat describes; occasionally in clean cases in children or young males I will use the muscle-splitting incision of McBurney.

Robert R. Craig, M. D., (Tonopah, Nev.)—More than half of my acute appendicitis cases are ruptured. I have never operated without removing the appendix, and so far have had no catastrophies traceable to this procedure. By gentle, careful technique most appendices can be located, isolated and removed without evisceration or contamination of the whole abdominal cavity. I see no advantage in the right rectus abdominis incision and often the disadvantage of opening into the free peritoneal cavity, instead of into the main objective, for one can to better advantage explore the abscess from the inside than from the outside. I prefer the right external incision, as far out as possible, sometimes opening directly into the abscess extraperitoneally. Through this incision one follows the leads, edematous peritoneum, omentum, and inflamed bowel, and by palpation reaches the abscess cavity, which is evacuated; and explored with the gloved finger, the appendix located and isolated with as little disturbance of protective walls as possible; often when the caecum is adherent the appendix is removed without drawing it into the incision. Three drains are used, one at least a cigarette or rubber tube, placing one in the pelvis, one to the stump of the appendix, and one high to upper limit of infection among the coils of inflamed intestine and omentum. If any part of the appendix lies without the abscess wall, the abscess is usually a very small one and at no point adherent to anterior parietes.

Dr. Sproat (closing)—I believe that conservatism, in not breaking down protective barriers to remove the appendix in acute cases where such barriers exist, is coming into more general usage. The more virulent the infection the greater the need for the absence of tissue trauma, and breaking down natural protective walls. In the majority of these cases the appendix extends outside of these walls, and they are notoriously difficult of removal, even with the greatest possible care.

Lower and Jones of Cleveland, in their paper read before the Section on Surgery, general and abdominal, at the American Medical Association meeting last June, state as follows: "The high operative mortality in cases of acute appendicitis and the postoperative morbidity in cases of chronic appendicitis are, in our opinion, due in large measure to the common belief that in each case the only proper procedure is removal of the appendix." And again, "In acute appendicitis we would emphasize our own adherence to the procedures outlined, and to Crile's principle of confining the primary operative procedure to incision and drainage only; if the appendix is not readily accessible, the removal of the appendix and such other exploration as may be necessary being deferred until the acute state is past."

Since this paper was read, I operated upon a patient with an acute fulminating infection which caused rupture and abscess in thirty-six hours of onset, and within twenty-three days the incision had closed and he had left the hospital. From past experiences with removal, convalescence, I am sure, would have been a stormy one had this been done.

KIDNEY AND URETERAL STONE SURGERY*

By HERMAN L. KRETSCHMER, M. D., Chicago

In presenting for your consideration the problems of kidney stone surgery, I have thought it advisable not to dwell at length on the technical side of the subject nor to burden you with the reading of statistics, but to present some of the difficulties and some of the problems encountered in our everyday work.

It is also advisable, when considering this subject, to include stones in the ureter, since some of the problems of diagnosis and many of the clinical symptoms are present both in kidney stone and stone in the ureter to such an extent that at first an absolute differentiation between them from the clinical history alone is not possible.

At one time it was the opinion that kidney stones, as well as renal infections, were rare in women; but recent intensive studies of this subject have completely disproved this. Not only do kidney and ureteral stones occur in women, but they occur much more frequently than has hitherto been supposed. This applies also to the frequency of occurrence of renal infections. In fact, if certain renal infections which occur only in women are considered—such as pyelitis during and after pregnancy, the greater number of cases of pyelitis of infancy among girl babies as compared with boy babies, the frequency of kidney infections either immediately or remotely after gynecological operations, as well as these infections associated with pathological conditions of the female pelvic organs, one may safely say that kidney infections occur much more frequently in women than in men.

Kidney stone, according to custom, is generally associated with a so-called classical history of renal colic. Not infrequently, however, kidney stones run a silent course. At times there may be no subjective symptoms suggestive of renal stone; again, the only manifestation may be the presence of pus in the urine, and this may be very slight or even absent. As examples of cases in which kidney stones were found, though not suspected, I would like to mention briefly just a few instances. One of our patients complained of frequency of urination, which, because of his age, he attributed to his prostate gland. The final diagnosis was carcinoma of the colon, which necessitated a colostomy for obstruction. Roentgen-ray examination revealed a large stone in the kidney.

Another patient, suffering from tabes for many years, had urinary incontinence. Roentgen-ray examination showed a large solitary kidney stone.

A young woman had the symptoms and signs of renal tuberculosis, the diagnosis being substantiated by means of the cystoscope and the ureteral catheter. A routine Roentgen-ray examination revealed a stone in the tuberculous kidney.

A man of 70 came to the office to have one of his periodical recurring attacks of cystitis treated by vesical irrigations, as had been his custom for many years. Routine Roentgen-ray examination showed

*Read before the Utah State Medical Association, June 22, 1923.